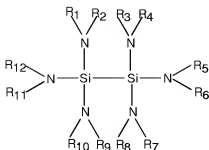


Section I (Amendments to the Claims)

Please amend claims 1, 7, 13, 14, 18 and 21, as set out in the following listing of the claims 1-31 of the application.

1. (Currently Amended) A silicon compound comprising a disilane derivative that is fully substituted with alkylamino and/or dialkylamino functional groups, with the proviso that the disilane substituents are not all simultaneously dimethylamino or diethylamino and with the proviso that ~~the substituents on each silane are not all simultaneously the same C₁-C₄ monoalkylamino group~~ all disilane substituents are not simultaneously monoalkylamino.
2. (Original) The silicon compound of claim 1, characterized by two or more alkylamino and/or dialkylamino functional groups symmetrically distributed in relation to the Si-Si bond.
3. (Original) The silicon compound of claim 1, characterized by two or more alkylamino functional groups symmetrically distributed in relation to the Si-Si bond.
4. (Original) The silicon compound of claim 1, characterized by two or more dialkylamino functional groups symmetrically distributed in relation to the Si-Si bond.
5. (Original) The silicon compound of claim 1, characterized by a melting temperature of less than 100°C.
6. (Original) The silicon compound of claim 1, characterized by a vaporization temperature of less than 300°C.
7. (Currently Amended) A silicon compound having the formula:



wherein:

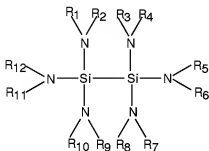
R₁-R₁₂ may be the same as or different from one another and each is independently selected from the group consisting of H, C₁-C₃ alkyl, and C₃-C₆ cycloalkyl, with the proviso that R₁-R₁₂ are not all simultaneously methyl or ethyl and with the proviso that the substituents on each silane are not all simultaneously ~~the same C₁-C₄ monoalkylamino group~~ monoalkylamino or monocycloalkylamino.

8. (Original) The silicon compound of claim 7, characterized by two or more alkylamino and/or dialkylamino functional groups symmetrically distributed in relation to the Si-Si bond.
9. (Original) The silicon compound of claim 7, characterized by two or more alkylamino functional groups symmetrically distributed in relation to the Si-Si bond.
10. (Original) The silicon compound of claim 7, characterized by two or more dialkylamino functional groups symmetrically distributed in relation to the Si-Si bond.
11. (Original) The silicon compound of claim 7, characterized by a melting temperature of less than 100°C.
12. (Original) The silicon compound of claim 7, characterized by a vaporization temperature of less than 300°C.

13. (Currently amended) A silicon compound selected from the group consisting of $[(\text{NEt}_2)_2(\text{HNMe})\text{Si}-\text{Si}(\text{HNMe})(\text{NEt}_2)_2]$, $(\text{HNBu}^t)_2(\text{HNMe})\text{Si}-\text{Si}(\text{HNMe})(\text{HNBu}^t)_2$, and $(\text{HNBu}^t)_2(\text{NH}_2)\text{Si}-\text{Si}(\text{NH}_2)(\text{HNBu}^t)_2$.
14. (Withdrawn – currently amended) A method for forming a silicon compound as in claim 13, comprising one of the following reactions:
- (1) $(\text{NEt}_2)_2(\text{Cl})\text{Si}-\text{Si}(\text{Cl})(\text{NEt}_2)_2 + \text{excess H}_2\text{NMe} \rightarrow (\text{NEt}_2)_2(\text{HNMe})\text{Si}-\text{Si}(\text{HNMe})(\text{NEt}_2)_2 + 2\text{H}_2\text{NMe}\cdot\text{HCl}; \text{ and}$
- (2) $(\text{HNBu}^t)_2(\text{Cl})\text{Si}-\text{Si}(\text{Cl})(\text{HNBu}^t)_2 + 2\text{LiN(H)Me} \rightarrow (\text{HNBu}^t)_2(\text{HNMe})\text{Si}-\text{Si}(\text{HNMe})(\text{HNBu}^t)_2 + 2\text{LiCl}; \text{ and}$
- (3) $(\text{HNBu}^t)_2(\text{Cl})\text{Si}-\text{Si}(\text{Cl})(\text{HNBu}^t)_2 + 2\text{LiNH}_2 \rightarrow (\text{HNBu}^t)_2(\text{NH}_2)\text{Si}-\text{Si}(\text{NH}_2)(\text{HNBu}^t)_2 + 2\text{LiCl}.$
15. (Withdrawn) A method of forming a silicon-containing film on a substrate, comprising contacting a substrate under chemical vapor deposition conditions with a vapor of a silicon compound as in claim 1.
16. (Withdrawn) A method of forming a silicon-containing film on a substrate, comprising contacting a substrate under chemical vapor deposition conditions with a vapor of a silicon compound as in claim 7.
17. (Withdrawn) A method of forming a silicon-containing film on a substrate, comprising contacting a substrate under chemical vapor deposition conditions with a vapor of a silicon compound as in claim 13.
18. (Currently amended) A composition for chemical vapor deposition of a silicon-containing film on a substrate, said composition comprising (i) one or more disilane derivatives that are fully substituted with alkylamino and/or dialkylamino functional groups, with the proviso that the disilane substituents are not all simultaneously dimethylamino or diethylamino and with the proviso that the substituents on each silane

~~are not all simultaneously the same C₁-C₄ monoalkylamino group~~ all disilane substituents are not simultaneously monoalkylamino, and (ii) one or more hydrocarbon solvents.

19. (Original) The composition of claim 18, wherein said hydrocarbon solvents comprise HNⁱPr₂.
20. (Original) The composition of claim 18, comprising at least two disilane derivatives.
21. (Currently Amended) A composition for chemical vapor deposition of a silicon-containing film on a substrate, said composition comprising:
- (a) one or more silicon compounds having the formula:



wherein:

R₁-R₁₂ may be the same as or different from one another and each is independently selected from the group consisting of H, C₁-C₅ alkyl, and C₃-C₆ cycloalkyl, with the proviso that R₁-R₁₂ are not all simultaneously methyl or ethyl and with the proviso that the substituents on each silane are not all simultaneously ~~the same C₁-C₄ monoalkylamino group~~ monoalkylamino or monocycloalkylamino; and

- (b) one or more hydrocarbon solvents.
22. (Original) The composition of claim 21, wherein said hydrocarbon solvents comprise HNⁱPr₂.

23. (Original) The composition of claim 21, comprising at least two disilane derivatives.
24. (Withdrawn) A method of forming a silicon-containing film on a substrate, comprising the steps of:
- (a) providing a composition as in claim 18;
 - (b) vaporizing said composition to form a precursor vapor; and
 - (c) contacting the substrate under chemical vapor deposition conditions with said precursor vapor to form said silicon-containing film.
25. (Withdrawn) The method of claim 24, wherein said composition is vaporized at a temperature that is not higher than 300°C.
26. (Withdrawn) The method of claim 24, wherein said composition is vaporized at a temperature that is not higher than 150°C.
27. (Withdrawn) The method of claim 24, wherein said silicon-containing film comprises silicon nitride.
28. (Withdrawn) A method of forming a silicon-containing film on a substrate, comprising the steps of:
- (a) providing a composition as in claim 21;
 - (b) vaporizing said composition to form a precursor vapor; and
 - (c) contacting the substrate under chemical vapor deposition conditions with said precursor vapor to form said silicon-containing film.
29. (Withdrawn) The method of claim 28, wherein said composition is vaporized at a temperature that is not higher than 300°C.

30. (Withdrawn) The method of claim 28, wherein said composition is vaporized at a temperature that is not higher than 150°C.
31. (Withdrawn) The method of claim 28, wherein said silicon-containing film comprises silicon nitride.

THE REMAINDER OF THIS PAGE IS INTENTIONALLY LEFT BLANK